1-1-2003

Profile of a Distributed Learning Curriculum for Adult Education as Perceived by Students

Taella M. Hill

PROFILE OF A DISTRIBUTED LEARNING CURRICULUM FOR ADULT EDUCATION AS PERCEIVED BY STUDENTS

Thesis submitted to
The Graduate College of
Marshall University

In partial fulfillment of the
Requirements for the degree of
Education Specialist in the Department of
Adult and Technical Education

by

Taella M. Hill

Dr. Howard Gordon, Committee Chairperson
Dr. Laura Wyant
Dr. Levene Olson

Marshall University

August, 2003

ABSTRACT

"PROFILE OF A DISTRIBUTED LEARNING CURRICULUM FOR ADULT EDUCATION AS PERCEIVED BY STUDENTS"

By Taella M. Hill

The purpose of this study was to examine distributed learning in higher education. It was also the intention of this study to describe the profiles of graduate students opting to utilize the delivery modes associated with distributed learning and to assess their overall satisfaction with their experiences. Findings indicated that given options, students are more likely to select methods of instruction best suited to their particular needs. The qualitative data obtained through the study revealed a need for institutions to consider student feedback when making decisions on the direction their distributed learning programs will take in the future.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure Page

CHAPTER I

INTRODUCTION

Universities have traditionally established learning environments that depend heavily on the lecture presentation mode. Learning was expected to occur from pages of notes and information received from the instructor. The physical and pedagogical makeup of universities was also very structured. Hanna (2000) describes the traditional university as:

1. A residential student body;
2. A recognized geographic service area from which the majority of students are drawn;
3. Full-time faculty members who organize curricula and degrees, teach in face-to-face settings, engage in scholarship, often conduct public service, and share in institutional governance;
4. A central library and physical plant;
5. Non-profit financial status;
6. Evaluation strategies of organizational effectiveness based upon measurement of inputs to instruction, such as funding, library holdings, facilities, faculty/student ratios, faculty qualifications, and student qualifications.

Colleges and universities should no longer cling to traditional modes of instruction, such as lectures, for this constantly growing population of learners. In the twenty-first century, educators have been called upon to design a new type of learning environment that will connect students with their instructors as well as with each other. The environment must be flexible enough to allow students to connect their acquired learning with past and present experiences, while enabling them to take advantage of the wide expanse of knowledge and information available to them through new technologies (Hanna, 2000).

The use of distributed learning as an instructional mode is one way to provide the most comprehensive education for students. Distributed learning encourages educational activities employed in varying settings - classrooms, work places, homes and community. It is based on a mixture of presentational and constructivist pedagogies. In presentational learning situations, the instructor presents the required knowledge to the students. Constructivism adds another dimension - the learner is expected to lead the "construction" of his or her own knowledge through interaction with others and with guidance from the teacher. Lambert et. al. (1995) identified six core principles upon which this learning environment is based:

1. Knowledge and beliefs are formed within the learner;
2. Learners personally imbue experiences with meaning;
3. Learning activities should enable learners to gain access to their experiences, knowledge and beliefs;
4. Learning is a social activity that is enhanced by shared inquiry;
5. Reflection and metacognition are essential aspects of constructing knowledge and meaning;
6. The outcomes of the learning process are varied and often unpredictable (p 17, 18).

Which students will benefit most from distributed educational opportunities? Adult learners have the most to gain from instruction that encourages student-centered learning, learning that focuses on obtaining the knowledge and information that will best benefit them. Adult students are very capable of planning and arranging learning appropriate for them. They can construct knowledge from past and present experiences that aids in their learning.

Constructivism is not a new concept. Diverse thinkers such as John Dewey (1916) and Levi Vygotsky (1962) felt that learning occurs most effectively when connected to the personal experience and knowledge base of each learner, engaging him/her in the construction of his/her own learning. In addition, Winn (1997) believes that understanding arises as the learners work to build upon what they already know and believe. They reconcile this with information they encounter for the first time as well as with old information from which they gain new perspectives. This knowledge is shared not only with the instructor, but with other students as well.

Statement of the Problem

The profile of the students who are currently entering colleges and universities has changed drastically throughout the years. In addition to the young college student fresh out of high school, higher education welcomes a new group of students - students who are diverse in appearance, demographic characteristics and educational expectations. Adult students represent a rapidly growing segment of the university population. They have their own ideas about the shape their educational experiences should take.

This is consistent with theories of adult learning expressed by Knowles (1978), Knox (1977), Kidd (1973) and others, which state that adults need relevant learning experiences; they have their own stores of experiences that can be utilized in any new learning; their learning experiences should be interactive; and most of all, they want to have input into the format and extent of their learning experiences.

It is to the best interest of higher education administrators and faculty to recognize that it is imperative that policies and curriculums be adapted that will serve this particular group of students. There are fundamental changes in the demand from consumers

(students) which have resulted from the growth of part-time and external enrollments, community college enrollments, continuing education enrollments and other formal or informal education (Hanna, 2000).

Many adult students find it difficult to attend the traditional lecture style of classroom instruction for various reasons. They might not have the time to travel back and forth to the classroom because of family or work responsibilities. Also, there are students who do not have local access to facilities that will satisfy their educational needs. Distance education is one solution for meeting these needs.

Technologies have been developed that can help students overcome the time/location constraints placed upon them. It is not enough, though, to simply provide technologies with the expectation that instruction will occur. Without sound pedagogical principles to guide instruction, educators will only be providing information. There is no guarantee that learning will take place. Adult learners have to be able to construct knowledge from any information they gather. The important issue for university instruction is not just the availability and affordability of sophisticated computers and telecommunications. If these devices do not enable some form of learning experience for students, instruction is not complete. (Dede, 2000)

Distributed learning, another solution for adult instruction, involves the utilization of varying modes of technology to deliver instruction. This includes, but is not limited to instruction via the internet, e-mail, electronic bulletin boards, online chat rooms, audio-video training, video-conferencing and lectures.

Distributed learning is very conducive to the needs and demands of today's adult student – a challenge to higher education institutions. Students should be encouraged to have the types of experiences that help to develop knowledge and skills appropriate for

living and working in a rapidly changing, technology-based society. They should also be encouraged to develop the habits and attitudes that will enable them to be lifetime learners. Smith (1990) reported that this would transform the educational system from one in which students learned specified content in order to prepare for a lifetime of work to one in which students learn to learn throughout their lifetimes in order to live productive lives.

Purpose and Objectives

The purpose of this study was to examine distributed learning in higher education and examine student satisfaction of this type of learning. As a result of the study, the researcher discusses an instructional framework that enables graduate and postgraduate adult learners to realize their educational goals. Such a framework should allow students to create, share, and master the required knowledge using real-world issues and learned experiences.

Pedagogical strategies need to be developed that will utilize a mixture of the technology emerging today, allowing students to interact with their instructors and with each other at the same time increasing their knowledge.

The following objectives guided this study:

1. To describe the profiles of adult students who have opted to pursue graduate education through distributed educational opportunities;
2. To assess the satisfaction levels of adult students enrolled in courses that utilize distributed educational methods in instruction;
3. To provide selected distributed education solutions in order to maximize the educational experience of students involved in the adult education curriculum.

Significance of the Study

Understanding the needs of adult learners is essential for higher education. The numbers of adult students seeking higher education, especially at the graduate level, has prompted them to look toward new, innovative instructional delivery methods to attract and accommodate them.

Dillman, Christenson, Salant and Warner (1998), in their survey of what the adult public wants from higher education, discovered the following three points: 1) higher demand for lifelong education and training means that colleges and universities have many more potential customers than in the past; 2) distance education methods offer one means of meeting the demand for lifelong learning; and 3) colleges and universities must change how they do business to meet the needs of lifelong learners.

If educators do not heed the education demands of these learners, there is danger of losing the opportunity to serve them. According to Hanna (2000), for-profit organizations have emerged as competition to traditional colleges and universities in the development of distributed learning. Opportunities have arisen because of 1) the increasing costs of university tuition; 2) the growing demand for learning; 3) the demand for content that can be applied in work settings; and 4) the new technologies that are readily available in industry. This competition has begun to cause significant change in traditional universities.

Limitations of the Study

The generalizations made from this research study were subject to the following limitations:

1. The population sample was based on one institution, Marshall University.
2. The survey was distributed through the Marshall University Computing Services Database Management. A target announcement was sent via the Marshall University e-mail system (MyMU) to graduate students enrolled at Marshall University in the Spring Semester 2003 (see Appendix A) requesting their participation in the self-administered survey.
3. To protect the privacy of survey respondents, as required by the Research Protocol Survey issued by the Marshall University Office of Research Integrity, (see Appendix B), the researcher did not have direct access to any names or e-mail addresses. This made follow-up requests to non-respondents very limited.

Definition of Terms

Adult learners/students - Individuals who are twenty-five years or older, and who have continued their education (informal or formal) because of internal and/or external circumstances in their lives.

Asynchronous learning - Learning that is self-paced. Students and instructors are not required to participate in learning activities at the same time.

Bulletin boards - The electronic version of public note boards which allows an individual to post a note in the designated area for people to read at a later time.

Chat rooms - Real-time communication between two or more people via the Internet.

Constructivism - A theory of learning which states that learners are actively involved in the construction of their own knowledge and meaning from past and present experiences.

Discussion boards - Participants are able to post messages, share information, discuss and debate ideas at their convenience.

Distance learning, distance education - Learning that takes place in a location that is physically removed from the instructor. The terms distance learning and distance education will be used interchangeably in this study.

Distributed learning - Instruction is distributed throughout various media to students that may, or may not, be studying at a distance. Videotapes, compressed video using two-way interactive television, online courses, and computer-enhanced courses are presently the most popular distributed learning modes being utilized. The media that will be used is selected according to the particular task at hand.

Electronic mail – Assignments and instructions are emailed between the instructor and students.

HEITV - The West Virginia Higher Education Instructional Television consortium that offers courses through public television. A limited number of face-to-face meetings are scheduled for discussion and examination purposes.

Internet - Modern network of computers that allow them to interact from anywhere in the world.

Interactive television - Features two way video and two way audio communications through high speed telephone lines. Classrooms are located at various campuses throughout the region.

Lecture instruction - Also known as face-to-face instruction, where the instructor stands before the students and gives information about the given subject.

Nontraditional students - Students who, for whatever reason did not continue to college directly from high school, or who have returned to college after a number of years of separation.

Satellite - Regular campus courses that are offered at a distance through satellite television.

Synchronous learning - Students and instructors are required to participate in learning activities simultaneously.

Traditional students - Students who entered a university or college upon graduation from high school.

Video - Classroom instruction is videotaped and then mailed to distance learning students for information.

Video conferencing - Instructor and students interact through live videotaped learning sessions. Special telephone lines are set up so students can call in with questions.

WebCt - Course management software used to deliver distance learning courses.

CHAPTER II

REVIEW OF RELATED LITERATURE

Profiles and Characteristics of the Adult Student in Higher Education

Studies have shown that the numbers of adults attending colleges and universities has increased considerably. A survey published in the Chronicle of Higher Education Almanac Issue (1996) reported that in the fall of 1993, 58.2% of all full-time and part-time college and university students were 22 years or older. The number of adults in community colleges and comprehensive colleges were also very substantial – 40.6% and 30.9% respectively (Quinnan, 1997).

Studies dealing with adult students have become very important to higher education because of increasing enrollments. According to Aslanian (2001), older students have made up about 85 percent of the more than 2 million graduate students enrolled in colleges during the time of the recent College Board study on adult students. In fact, more than one half of all graduate students in the study were over 30.

As the number of adults entering higher educational institutions increase, administrators must guarantee that their experiences are positive. Hensley and Kinser (2001) contend that adult students may be considered at-risk students to a certain point, but they see adult students as "tenacious persisters." They have continued to reenroll in higher education throughout their lives in order to meet their personally prescribed educational needs. The students profiled in this study are prime candidates for distributed education. They enter the institutions according to their own personal needs or expectations, bringing experience and knowledge gained since their entry. Whatever reason they might have had to leave has not deterred them from continuing at a later date that is more conducive to their needs, showing their persistence in pursuing their

education. When questioned on the reasons they returned, students expressed the following reasons:

1. Because of their experiences outside of college, they felt they could re-enter with a new sense of self-awareness
2. Because they wanted to prepare themselves for the future by advancing their current skills and knowledge;
3. Because of commitments made to family members, such as promises made to parents or as an example to their children.

Billings (1993) reviewed studies that examined students' orientation toward self-directed learning and self-management. Results were mixed, suggesting a positive relationship between self-directedness and achievement and several others reporting no relationship between the ability to manage one's own learning and academic success.

Distributed Education as the Delivery Method of Choice

In a study conducted by the College Board, Aslanian (2000) reported the following:

> The typical (median) graduate adult student uses a computer at work 9 to 10 hours per week, but almost one-half use a computer 15 hours or more – probably much more. Typically, the computer is used about 5 to 6 hours per week at home (p. 89).

To understand the effect distributed education has had on adult students, it is necessary to examine this particular mode of delivery and the level of satisfaction/dissatisfaction from students' perspectives. Distributed education provides opportunities for students to make choices about their learning. The ability to make these types of choices is an advantage to students.

When reporting the findings of the College Board study on distance learning, Aslanian (2001) stated the following:

> Eight percent of graduate adult students report taking courses solely through distance delivery techniques. Another 11percent take both classroom and distance courses in the same term. Therefore, about 20 percent of graduate adult students engaged in distance courses during their last term. Most often, the courses are delivered online through the Internet (47 percent), followed by videotapes (31 percent), correspondence (31 percent), and computer disks (22 percent)… (p. 114)

In a study conducted at the Keele University in the United Kingdom, learning was delivered both asynchronously and synchronously. Those students who wished to view their video assignments in a lecture-style environment during class time were allowed to do so. Other students decided to wait until later to check the videos out of the library to view on their own (Bostock, 1998).

A series of studies conducted by Scardamalia and Bereiter (in press) have indicated that students gained deeper understanding and collaboratively as a group have constructed knowledge while engaged in computerized learning network environments (CSILE) that support students in purposeful, intentional, and collaborative learning. In this environment, students are able to select from different modes of delivery – text, video, audio, and animation (Hsiao, 2002).

In comparison, a study of undergraduate students in Berkeley utilizing a single mode delivery (lecture) found that in a large lecture hall setting, only 20% of the students present retained what the instructor had discussed after the lecture given. Much of this was because the students were so absorbed in taking notes of the lecture they could not

internalize the information. It was also noted that after eight minutes of the lecture had passed, only 15% of the students were still listening (Hanley, 1994).

Another study conducted of two graduate level educational administration courses, it was determined that there was no significant difference in the characteristics of the classrooms of the students enrolled in a face-to-face classroom than those students in a distributed learning classroom. In this study, the research compared the characteristics of these two groups of students enrolled in identical courses with the exception of the delivery modes. One course was delivered through the traditional "face-to-face" mode, while the other course was delivered via distributed modes. (Patterson, 1999)

This study also revealed that the students who opted to take distributed coursework have exhibited a much stronger interest in using computers for class work as well as more confidence in their ability to perform the necessary tasks (Patterson, 1999). This does not negate the feelings of isolation and not being part of community as reported by students in other studies (Wegerif, 1998). Learning through distributed delivery modes is not suitable to all students.

Another research project conducted by the University of Michigan examined two very different case studies. Although the courses studied were different in context, by using the same method of instruction, the research team found very comparable results. Learner-centered design, which utilizes constructivist learning theories, is not limited to any single course or subject. Software has been designed to provide learner support enabling students to take advantage of scaffolding technology, a strategy that fills in the areas beyond learner knowledge. Scaffolding takes instruction beyond the typical face-to-face environment, allowing students to construct their own learning (Soloway, et.al., 1996).

One difference between the two groups of students in the Patterson (1999) study, was the amount of time students chose to spend in the "classroom" of their choice. Distributed students reported to have spent an average of 14 hours a week in involvement in classroom activities as compared to an average of 6 hours a week for the face-to-face students.

The studies discussed in this chapter support strong evidence that distributed learning has become a very popular instructional mode in higher education. Studies have shown that adult students and other nontraditional students are entering universities and colleges in increasing numbers. These students have very strong opinions about the directions their learning experiences should take. Factors such as time constraints, classroom locations, etc. often dictate the format of their instruction. The studies also indicated that, when given a choice, many students utilize the various modes of distributed instruction. While there were students who preferred mixing delivery methods in their instruction, there were students who preferred a more traditional approach to education. The characteristics of students taking distributed education courses versus students enrolled in traditional face-to-face courses is another area of interest to researchers in higher education.

CHAPTER III

METHODOLOGY

Population and Sample

This research project utilized the descriptive method. Descriptive research has historically been used to determine many adult educational issues. It has made significant contributions in the early development of adult education and training (Merriam, 1995). It is with this in mind that the researcher chose to do a descriptive study. This study used, as a population, Marshall University graduate students (N=3,987) enrolled during the Spring Semester, 2003. This population was obtained through the Banner System via the Marshall University Computing Services Database Management Department.

Development of Instrument

The researcher developed the self-administered, cross-sectional questionnaire survey used in this study. This type of cross-sectional survey, according to Gay and Airasian (2003), collects data from a selected group in a single point and time. The survey was constructed in Microsoft Word XP and then converted to Adobe Acrobat 5.0, an interactive tool. The survey consisted of the following categories:

1. Student demographic information;
2. A five point Likert scale that measured student satisfaction of delivery mode in distributed learning with Very Satisfied = 5, Satisfied = 4, Somewhat Satisfied = 3, Disappointed = 2 and Very Disappointed = 1. Participants were also asked to comment on the types of distributed learning tools they had used in the past or were currently using.

3. Another five point Likert scale measured the degree to which students agreed with statements about the distributed learning process with Strongly Agreed = 5, Agreed = 4, Uncertain = 3, Disagreed = 2 and Strongly Disagreed = 1.
4. A third Likert scale rated students' overall satisfaction with distributed learning courses with Very Satisfied = 5, Satisfied = 4, Somewhat Satisfied = 3, Disappointed = 2 and Very Disappointed = 1.
5. Finally, students were given an opportunity to describe how they would improve their distributed learning experiences.

Once constructed, the survey was emailed to various individuals in order to test the mechanics of the process. These individuals were asked to complete the survey according to the instructions provided. They were then asked to save their responses and return the survey, via email, to the researcher. The surveys were returned with no data attached. At this point the researcher discovered Adobe Acrobat could not be used as a delivery method for the survey. This required respondents to have access to an electronic mail program, such as Microsoft Outlook. Delivery modifications were necessary to minimize nonresponse because of technical issues. It was decided that a Microsoft Access database was set up for data collection.

The survey was e-mailed to two experts in the field of adult education to test the validity of the content. A pilot group was then selected to receive the survey. This pilot test measured ease of use and understanding of concepts and procedures. Fifty seven percent of those surveyed returned the instrument without problem.

A text announcement was sent via the Marshall University Database Management to all graduate students enrolled for the Spring Semester, 2003 (see Appendix A). It was then posted online at a website that would be easily accessible to all participants. Respondents were asked to complete the survey and submit their answers according to

the instructions provided. The survey remained active for one week. At the end of the week, a follow-up message was sent to the same population (n=3,987), reminding them to respond before the deadline, which had been extended for three more days. Responses were collected in a Microsoft Access database. The raw data was then converted from Microsoft Access to Microsoft Excel. At this point, the data was analyzed through the SPSS 11.5 for Windows software.

Data Collection

Of the total population of Marshall University graduates (N=3,987), 251 responded to the survey, a response rate of 6%. Merriam had the following to say about data collection:

> In many research studies, the researcher is limited by the amount of data that can be gathered. This limitation results from inaccessibility of data, or the sheer volume, which make collecting all pertinent data unrealistic. Therefore, one judgment that the researcher must make in designing and conducting the study concerns validity – how accurately do the data represent the phenomenon? The researcher must also recognize that a sample of research data is only an approximation of the phenomenon being studied and, in a sense, can never be completely accurate… (p. 142)

Fowler (2002) describes three categories of people who do not respond to surveys as (a) those whom the data collection procedures do not reach, thereby not giving them a chance to answer questions, (b) those asked to provide data who refuse to do so, and (c) those asked to provide data who are unable to perform the task required of them. He also admits that information on how to successfully deal with nonresponse to Internet surveys is very scarce, but the dynamics and challenges seem closely parallel to mail surveys. He

suggests simplifying the task of completing the survey easy and offering alternatives for nonrespondents in order to increase response rates.

With this in mind, a sample of Marshall University graduate students enrolled in the Summer A Session, 2003 was taken. These students (n=36) were part of the nonrespondent group surveyed online. This group was administered the same instrument and results were compared. The researcher found no difference in the demographic information for the two surveyed groups. Therefore, the research concludes that nonresponse error did not occur in the study. According to Dillman (2000), nonresponse error occurs when the people who responded to a survey were characteristically different from those who did not respond.

CHAPTER IV

RESULTS AND DISCUSSION

The researcher used SPSS version 11.5 to analyze and describe the data. A comparison was made of the data obtained from the two survey groups. According to Merriam (1984), data alone is meaningless without some sort of comparison and cannot provide answers to research questions alone.

Objective 1: Profile of Students Opting for Distributed Learning

The first objective of the research study was to describe the profiles of adult students who have opted to pursue graduate education through distributed educational opportunities. Demographic information for the two groups surveyed, the online respondents (n=251) and the paper nonrespondents (n=36), was compared. Forty three percent of the online group was 25 years or younger, while 25% of the paper group were 25 years or younger. The researcher found that 29.1% of the online group was between the ages of 25 and 36 years, while 47% of the respondents taking the paper survey were between the ages of 26 years and 35 years. About 73% of the respondents to the online survey were 35 years or younger and 72.2% of the respondents to the paper survey were 35 years or younger. Less than 30% of the remaining respondents for each group were 36 years or older (see Figure 4.1).

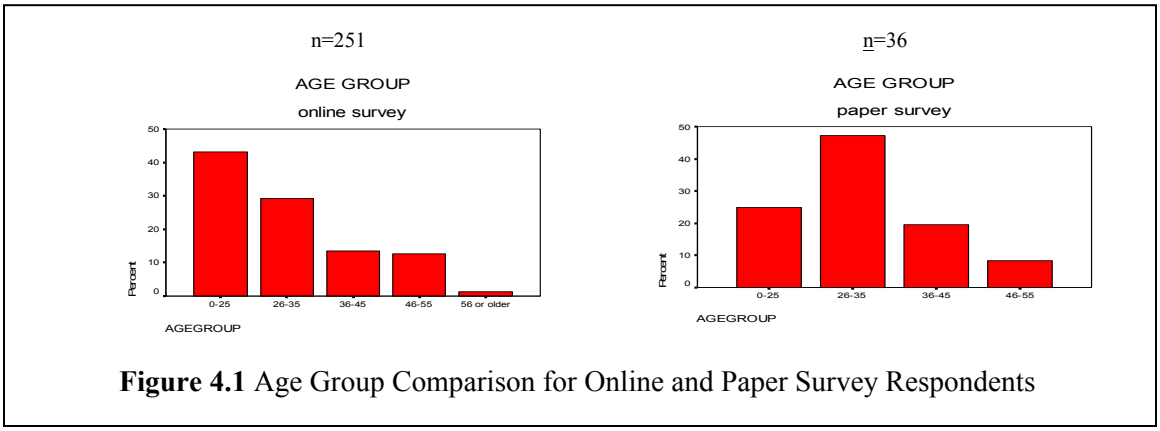

Figure 4.1 Age Group Comparison for Online and Paper Survey Respondents

Table 4.1 displays the employment status of both survey groups. Over 40% (41.4%) of the online survey respondents were employed full-time, 41% were employed part-time and 17% were not employed. In comparison, 44.4% of the paper survey respondents were employed full-time, 41.7% were employed part-time and 13.9% were not employed.

Table 4.1 Employment Status Comparison for Online and Paper Surveys Respondents

Employment	**Online Survey Percentage** n=251	**Paper Survey Percentage** n=36
Full-time	41.4%	44.4%
Part-time	41%	41.7%
Not employed	17%	13.9%
Nonresponse	.6%	

Figure 4.2 illustrates the gender of the respondents of both groups. Over two-thirds (66.1%) of the online survey respondents were female and 33.9% were male. In comparison, 66.7% of those interviewed by paper were female and 33.3% were male.

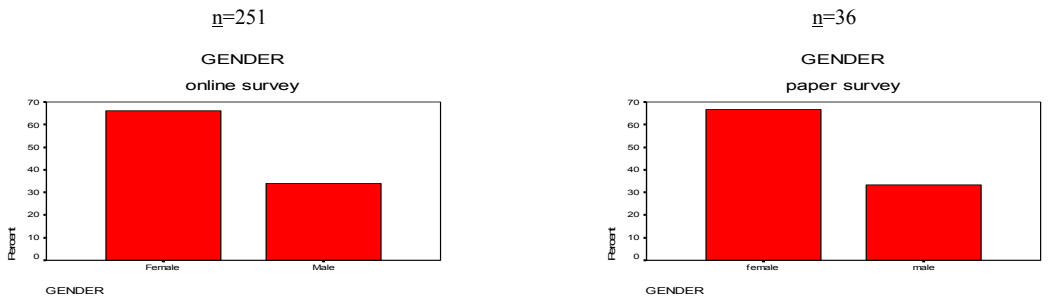

Figure 4.2 Comparisons of Gender for Online and Paper Surveys Respondents

Table 4.2 shows the student status of each group. Two-thirds (66.9%) of the online respondents surveyed were full-time students with 31.5% being part-time. In the paper survey, 61.1% were full-time students with 38.9% being part-time students.

Table 4.2 Comparison of Student Status for Online and Paper Surveys Respondents

Student Status	**Online Survey Percentage** n=251	**Paper Survey Percentage** n=36
Full-time	66.9%	61.1%
Part-time	31.5%	38.9%
Non-response	1.6%	

When looking at the marital status of the online respondents, the researcher found that 36.6% were married and 62.6% were single. Almost 19% of the group had children. 27.8% of the paper survey respondents were married and 72.2% were single (see Figure 4.3).

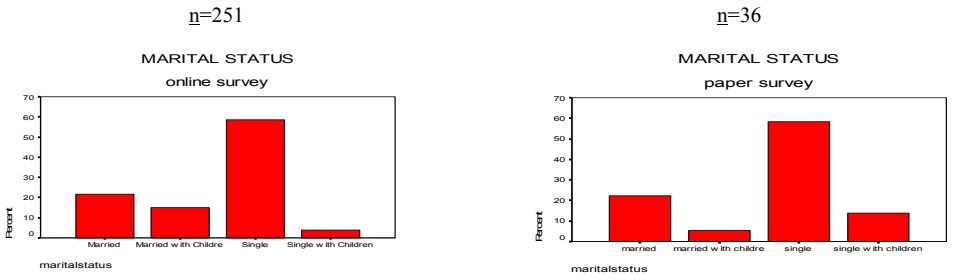

Figure 4.3 Comparison of Marital Status for Online and Paper Surveys Respondents

Table 4.3 shows the percentage of students enrolled in classes that are being taught on campus. Over four-fifths (80.9%) of the online survey respondents take other

classes on campus, while 97.2% of the paper survey respondents take other classes on campus (see Table 4.3).

Table 4.3 Comparison of Percentage of Respondents Taking Courses on Campus

Onine Survey Percentage n=251	**Paper Survey Percentage** n=36
80.9%	97.2%

Objective 2: Satisfaction Levels of Distributed Educational Methods

The second research objective was to assess the satisfaction levels of adult students enrolled in courses that utilize distributed educational methods in instruction. The respondents were first asked which of the listed delivery methods they had used in the past as well as during the current semester. This was done to ascertain whether these students had actually received instruction through distributed learning. According to the findings, the three most widely used media for both groups were lecture, email and the internet. Three-fourths (73.7%) of the online survey respondents and close to 90% of the paper survey respondents participated in lectures both in the past and during the current semester. In addition, 70% of online survey respondents and 55.4% of paper survey respondents received instruction through email. Internet instruction was used by 59% of the online respondents and 64% of the paper respondents. In contrast, HEITV experienced very little use by both groups of respondents (an average of 2%), as did satellite (an average of 10%) and video conferencing (an average of 15%). Table 4.4 gives a comparison of the media used by both survey respondent groups.

Table 4.4 Comparison of Distributed Learning Media Usage

	Online Survey Percentages n=251		Paper Survey Percentages n=36	
Distributed Learning Media	**Have used this media –in the past and/or currently**	**Have not used this media at all**	**Have used this media –in the past and/or currently**	**Have not used this media at all**
Video	36.1%	68.9%	64%	36%
Interactive Television	15.2%	84.8%	19.5%	80.5%
Discussion Boards	27.1%	66.9%	41.7%	58.3%
HEITV	2%	98%	2.8%	97.2%
Video Conferencing	7.2%	92.8%	22.2%	77.8%
Satellite	8.4%	91.6%	11.1%	88.9%
Chat Rooms	15.1%	84.9%	33.3%	66.7%
Lecture	73.7%	26.3%	88.9%	11.1%
Bulletin Boards	23.2%	76.8%	33.3%	66.7%
Email	66.9%	33.1%	55.4%	44.6%
Internet	59%	41%	63.9%	36.1%

Respondents of both surveys were also asked to rate their overall satisfaction with the distributed learning media they experienced. The mean scores for the three most widely used media (lecture, email and internet) indicate high satisfaction rates for online survey respondents. Lectures during the current semester experienced a mean score of 2.63 while past lectures received a mean score of 2.45. A mean score of 2.84 during the current semester and 2.34 for past semesters for email instruction also indicate satisfaction with that media. Internet instruction for the current semester and past

semesters also recorded relatively high mean scores of 2.45 and 2.17 respectively. Satisfaction rates for the three media discussed above were considerably lower for those who responded to the paper survey. The mean scores for both the current semester and past semesters averaged less than 2.00 for each of the media listed (see Table 4.5). Results also indicated that HEITV, satellite and video conferencing instruction rated very low, with mean scores averaging 1.00, 1.10 and 1.17 respectively.

Table 4.5 Descriptive Statistics for Overall Satisfaction with Distributed Learning Media Usage for Online and Paper Surveys

Online Survey Media Usage (n=251)				**Paper Survey Media Usage (n=36)**			
	N	**Mean**	**Std. Deviation**		**N**	**Mean**	**Std. Deviation**
VideoNow	251	1.24	.890	VideoNow	36	1.28	.741
VideoPast	251	1.72	1.294	VideoPast	36	2.56	1.715
ITVNow	251	1.17	.737	ITVNow	36	1.03	.167
ITVPast	251	1.37	1.066	ITVPast	36	1.50	1.254
DiscNow	251	1.59	1.346	DiscNow	36	1.03	.167
DiscPast	251	1.61	1.274	DiscPast	36	1.94	1.433
HEITVNow	251	1.00	.063	HEITVNow	36	1.00	.000
HEITVPast	251	1.06	.433	HEITVPast	36	1.03	.167
VidConfNow	251	1.05	.337	VidConfNow	36	1.03	.167
VidConfPast	251	1.20	.792	VidConfPast	36	1.42	.906
NowSatellite	251	1.04	.344	NowSatellite	36	1.03	.167
PastSatellite	251	1.25	.888	PastSatellite	36	1.11	.398
ChatNow	251	1.24	.866	ChatNow	36	1.11	.398
ChatPast	251	1.33	1.054	ChatPast	36	1.47	1.000
LectureNow	251	2.63	1.583	LectureNow	36	1.83	.878
LecturePast	251	2.45	1.789	LecturePast	36	2.00	1.042
NowBulletin	251	1.49	1.171	NowBulletin	36	1.03	.167
PastBulletin	251	1.42	1.041	PastBulletin	36	1.39	.728
EmailNow	251	2.84	2.034	EmailNow	36	1.44	.909
EmailPast	251	2.34	1.844	EmailPast	36	2.06	1.511
NowInternet	251	2.45	1.874	NowInternet	36	1.44	.843
PastInternet	251	2.17	1.754	PastInternet	36	1.69	.980
OtherNow	251	1.14	.673	OtherNow	36	1.00	.000
OtherPast	251	1.19	.840	OtherPast	36	1.31	.889
Valid N (listwise)	251			Valid N (listwise)	36		

Note. The overall satisfaction of media usage was rated on a Likert Scale; Very Satisfied=5, Satisfied=4, Somewhat Satisfied=3, Disappointed=2, Very Disappointed=1.

Table 4.6 compares the overall satisfaction of those individuals in both groups who had previously indicated that they utilized the instructional modes listed below. Of the students from both survey groups who experienced lectures and email, an average of 88% expressed overall satisfaction with both modes of instruction. Internet instruction was also given a high overall satisfaction rate of 95%.

Table 4.6 Overall Levels of Satisfaction with Distributed Learning Media

	Online Survey Overall Satisfaction with Media (n=251)		**Paper Survey Overall Satisfaction with Media** (n=36)	
Distributed Learning Media	**Very Satisfied or Satisfied when used currently**	**Very Satisfied or Satisfied when used in the past**	**Very Satisfied or Satisfied when used currently**	**Very Satisfied or Satisfied when used in the past**
Video	56%	43%	50%	36%
Interactive Television	63%	42%	***	33%
Discussion Boards	75%	57%	****	69%
HEITV	****	71%	*	**
Video Conferencing	71%	68%	****	57%
Satellite	50%	27%	****	33%
Chat Rooms	70%	53%	100%	62%
Lecture	85%	77%	90%	81%
Bulletin Boards	80%	92%	****	90%
Email	85%	80%	88%	71%
Internet	89%	81%	100%	73%

Note. *no response. **1 responded "disappointed." ***1 responded "somewhat satisfied." ****1 responded "very satisfied."

Respondents were asked a series of questions to determine their overall satisfaction with their distributing learning experiences. Responses were coded on a Likert scale with Strongly Agree=5, Agree=4, Uncertain=3, Disagree=2 and Strongly Disagree=1.

Respondents' Overall Satisfaction with Their Learning Experiences

1. ***"The course materials (media, handouts, books, etc.) are available when needed."*** In response, 78.1% of the respondents of the online survey agreed with the statement while 80.6% of the respondents of the paper survey agreed with the statement.
2. ***"It is not difficult for me to complete my assignments in a timely manner."*** Over three-fourths (75.3%) of the online survey respondents were in agreement with the statement while 77.8% of the paper survey respondents were in agreement with the statement.
3. ***"I feel comfortable asking questions and having public discussions."*** Forty three percent of online survey respondents agreed with this statement while over one-third (34.7%) strongly disagreed. In comparison, 72.2% of the paper survey respondents agreed while 13.9% disagreed with the statement.
4. ***"The students in my group participated in the activities and discussions."*** About 74% of the online survey respondents agreed with this statement, while 72.2% of the paper survey respondents agreed with it.
5. ***"The instructor encourages participation from the students at regular intervals."*** Close to four-fifths (78%) of the online survey respondents agreed with the statement while 75% of the paper survey respondents agreed.
6. ***"The instructions are clear and to the point."*** Almost 74% of the online survey respondents agreed while over three-fourths (77.8%) of the paper survey respondents agreed with the statement.
7. ***"I think that distributed learning is appropriate for this type of subject matter."*** When asked to respond to this statement, 66.5% of online survey respondents agreed, while 75% of the paper survey respondents agreed.

8. ***"I would recommend distributed learning courses to others."*** Over two-thirds (67.7%) of online survey respondents would recommend distributed learning courses, while about four-fifths (80.6%) of the paper survey respondents would recommend them.

Table 4.7 shows a comparison of the overall satisfaction with the learning experiences of both groups. As indicated in the results, online survey respondents think distributed learning was appropriate for their subject matter (mean score of 3.22) and would recommend that type of instruction for others (mean score of 3.15). The paper survey respondents were slightly less enthusiastic with distributed learning as an appropriate instruction method as indicated by the mean score of 2.57. Nor would they recommend distributed learning to others as readily, according to the mean score of 2.26.

Table 4.7 Comparison of Survey Respondents' Overall Satisfaction with Instruction

	Online Survey Responses n=251			**Paper Survey Responses n=36**		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
"The course materials (media, handouts, books, etc.) are available when needed."	251	2.82	1.358	35	2.63	.973
"It is not difficult for me to complete my assignments in a timely manner."	251	2.85	1.261	35	2.49	1.067
"I feel comfortable asking questions and having public discussions."	251	2.93	1.162	35	2.54	1.010
"The students in my group participated in the activities and discussions."	251	2.86	1.404	35	2.37	1.140
"The instructor encourages participation from the students at regular intervals."	251	3.04	1.385	35	2.63	1.215
"The instructions are clear and to the point."	251	2.96	1.497	35	2.66	1.187
"I think that distributed learning is appropriate for this type of subject matter."	251	3.22	1.623	35	2.57	1.195
"I would recommend distributed learning courses to others."	251	3.15	1.547	35	2.26	.741
Valid N (listwise)	251			35		

Note. Students overall satisfaction with their learning experiences was rated on a Likert Scale; Strongly Agreed=5, Agreed=4, Uncertain=3, Disagreed=2, Strongly Disagreed=1.

When asked to rate overall satisfaction with distributed learning courses, over two-thirds (66.9%) of the online survey participants were satisfied with a mean score of 3.72, compared to four-fifths (80.6%) of the participants in the paper survey who were satisfied with their overall experience with a mean score of 2.33 (see Table 4.8).

Table 4.8 Overall Satisfaction with Distributed Learning Courses.

Online Survey n=251				Paper Survey n=36			
Percentage	N	Mean	Std. Deviation	Percentage	N	Mean	Std. Deviation
66.9%	251	3.72	1.484	80.6%	36	2.33	.862

Note. The overall satisfaction of media usage was rated on a Likert Scale; Very Satisfied=5, Satisfied=4, Somewhat Satisfied=3, Disappointed=2, Very Disappointed=1.

Objective 3: Distributed Education Solutions – Qualitative Data

The third objective was to provide selected distributed education solutions in order to maximize the educational experience of students involved in the adult education curriculum. Based on the following qualitative data collected from respondents concerning suggestions for making changes in their distributed learning experience, it was found that several students felt this delivery mode was not conducive to learning:

- *"Eliminate distributed learning. If a student needs a certain course, he or she will just have to travel to the location. If the university is uncomfortable with making students travel back and forth to Huntington and South Charleston, the university should offer the same course on different days in each location. The university and its employees (including instructors) are here to serve the students. Students are best served by live, not videolinked learning."*
- *"It is very hard to learn anything from such courses, especially if your professor is on the other campus."*

- *"For my graduate program of Communication Disorders, it is nearly impossible to have distributed learning. I think overall, distributed learning is a lazy way out, and should only be used in addition to regular live lectures."*
- *"…I am not all that experienced with high-tech classes. I am a graduate student in Sociology. In Sociology, we learn more through interaction with the professor. Most of my professors lecture and/or create seminar classes; therefore, my classes are more one-on-one, rather than using media materials."*
- *"I didn't like the WebCt course as a style of distance learning. I preferred (and learned best via) the classes being taught by traditional classroom style lecture, discussion, presentation, and examination style, where professors can be addressed before, during and after class regarding grades, requirements, material content and skill evaluation. This did not seem possible while taking WebCt."*
- *"Without a lecture, the courses are just readings. I can read on my own, I want some personal vignettes about the subjects at hand. You don't get that from a class that is strictly internet."*

Other students were very supportive of their experiences with distributed learning and responded more positively:

- *"MORE OF THEM!!!! LESS CLASS TIME. E-mail, 'chat', and electronic distribution are MORE than adequate at this level for most classes (obviously, 'wet labs' are out). These methods have been used successfully for YEARS in medicine, nursing, the military, and other professions that are somewhat restrictive as far as the ability for students to 'get away' for a long, often unnecessary lecture. These are valid methods that are very effective...glad MU is getting underway by applying these methods of delivering quality education. MORE OF THEM!!! "*
- *"Make more of these types of classes available, when possible, so more nontraditional students can get a degree who can't attend weekly meeting on campus because of job or other considerations."*

- *"I think for the most part, as a Graduate Student when involved in a discussion group, people tend to address issues on evidence based on books, journal articles, what the author says, and other scholarly facts. That is fine and reasonable as well. However I am only 'somewhat satisfied' with my courses because they do not use distributed learning as much as I think they should. I would love to see more WebCt courses, where you can check your progress (grades, lecture notes, assignments are posted)."*
- *"Offer more courses, given the large number of students who live in rural areas. Students who live in my area, for example, drive 3 to 4 hours to get to live classes."*
- *"Make it more widely available. Commuting from Huntington to South Charleston 3 times a week is a pain [sic]. Use the technology more, so that more students that live in Huntington could view the instruction via TV."*
- *"I am quite satisfied but of course I would love to have even more course offerings each term."*
- *"I have had all my classes statewide and the instructors have been very helpful when I have had questions. I have no complaints about the system and think it should continue and grow."*

Another group of students exploring distributed learning as an instructional method expressed certain issues of concern about the appropriateness of such instruction:

- *"The concerns I have are inherent to the experience. Live instruction is superior and distance learning is ok as a last resort for students with travel restrictions."*
- *"Classes should be taught in the classroom, except in instances when distance dictates otherwise."*
- *"...I think distributed (distance) learning is effective, but it takes some getting used to. I took an internet course, which required more on-your-own reading and less auditory instruction. Real-time video conferencing would probably be better, but I enjoyed the freedom of being able to work when I wanted to with the Internet course. These types of courses seem to be very well suited to individuals with jobs who want an education, but can't quit work."*

- *"The success of a web-based class is very dependent on the type of class being taught…classes like anatomy/physiology do not work well online, but classes such as theory and research do."*
- *"More practice and a few years of experience. I think in the near future they will be better."*

Respondent provided very strong suggestions in three areas when asked for solutions to their distributed learning concerns:

1. <u>Curriculum Issues</u> – In the area of curriculum development, respondents indicated a need for more specific instructions.

    - *"That chat room and bulletin board transcripts of course meetings (at the regular times) be made available to the students and professor [sic]. I had to keep copying and pasting into Word in order to have an accessible record of what we'd discussed."*
    - *"…changing some of the menu options or making it so you don't have to go back through three screens to get where you're going on WebCt. Offering more classes with online instruction would be wonderful as well, especially for those students who work. Require all professors to post his/her syllabus online; likewise require all students to periodically log-in to WebCt to view class syllabus, bulletin board announcements, email, discussion groups, pdf files, etc., as appropriate."*
    - *"Make the course as challenging as possible. If a student is allowed to repeatedly take a test, because it is an electronic course, then where is the motivation to study?"*
    - *"Some live class meetings, maybe once a month really helps. You get to know the teacher and other students by face and name better."*
    - *"Have a resource person available in the community who is knowledgeable in the subject area as a reference."*
    - *"Someone should actually run the video cam for better results, and the room should be set up for recording purposes. I think notes should be in*

presentation form and emailed to students before class, that way they can follow along and listen to what is going on."

- *"More courses should have study guides or other class materials accessible online."*

2. *Instructor Issues* – The respondents noted several important instructor issues which included accessibility and flexible schedules.

   - *"Clearer instructions from the instructors. I have had instructors change what they required for assignments and not extend the time allotted to complete the assignment. In some instances, materials were not provided in a timely manner…"*
   - *"The professors be more accessible for questions or concerns if needed [sic]."*
   - *"Clearer expectations and instructions from teachers. Assignments and tests posted in a timely manner [sic]."*
   - *"More scheduled/optional chat sessions with the instructor [sic]."*
   - *"Instructors must be more flexible in meeting student needs. Content needs to be previously reviewed before placing it on a WebCt course…"*
   - *"…that all classes, whether WebCt or classroom lectures, have discussion boards, and the instructors encourage their use for students since we do not live in a campus-type situation. Classroom meetings can sometimes be 1 to 1.5 months apart…"*
   - *"Have training for professors to aid them in utilizing the distributed learning effectively."*
   - *"The classes only work well if the instructor has a positive attitude and is prepared – students follow the instructor's lead…"*

3. *Technology* – Technology seemed to be a significant issue for the respondents from technical support staff to equipment failures.

- *"Delivery by Internet or WebCt need more support from the computer people responsible for putting the courses up."*
- *"…wireless Ethernet/VPN in classrooms for instant messaging between classes and to the instructor for questions/comments. The current video link is cumbersome. Many times, rather than ask a question I do nothing rather than disrupt the instructor…"*
- *"… faster connections, 'download times', etc. This is not a problem if a student is using a computer that is directly connected to the MU system. It is a problem at locations or with equipment that do not provide DSL or higher connections."*
- *"The only major problem I have seen relates to technical difficulties. If we could remove all of those mishaps, distributed learning would be great."*
- *"More consistent service (email down a lot, satellite not working correctly when using on-campus TV courses) [sic]."*
- *"Further improvements are needed especially technologically and in the management of existing technology. Interactive classes (I am taking) are very good but I (personally) think that technicians are not very cooperative and they do not know much about technology…"*
- *"The only reason I rated the video conferencing courses as high as I did is because the instructor was lecturing from my end. If I had to watch the instructor lecture from Charleston, and I was in Huntington---I would have rated the experience very low."*
- *"Increasing the maintenance to ensure that limited technical difficulties occur… the TV Interactive courses need to be improved in a variety of ways. It was too much of a hassle every class period, which took away time and energy. The sound system used needs to be improved and something needs to be done about the screen… satellite classes should not be used for classes that involve discussion. I had an ethics class that consisted of about 90% discussion, which is painful over the satellite between Huntington and South Charleston."*

- *"The technology needs to be upgraded if Marshall is going to have these types of classes. The connection was very bad in the last one I took, the sound would go in and out, the picture was horrible and the time lapse was at least 7 seconds…"*
- *"The connection between classes broke at least once a week. It was very frustrating."*
- *"I recently have had technical difficulties with a WebCt course. It caused me to have to turn in a final exam late. I would suggest that something that you turn in via the Internet should not be used as 100% of your grade in case of computer glitches."*

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this research study was to examine distributed learning in higher education and to measure student satisfaction of their learning experiences. Demographic profiles of respondents from both groups were collected and compared. Upon analyzing the data, the researcher discovered that the largest percentage (72%) of surveyed students in both groups were 35 years or younger. However, those students younger than 26 years showed a significant difference – over two-fifths (45%) of the online survey respondents were younger than 26, while only one-fourth (25%) of the paper survey respondents were younger than 26.

No difference was indicated between the percentages of students employed full-time and part-time in either group. Over 50% of respondents in both surveys were full-time students at the time of their distributed learning experience.

Female students outnumbered male students 2 to 1 in both groups. This contradicts the report from the Profile of Participation in Distance Education Statistics (2002), where no significant difference in the gender of students in distance education during the time period was reported. A large percentage of respondents for both surveys (69% for online and 72% for paper) were single.

Over four-fifths (80%) of both groups were also enrolled in courses taught on campus at the time of this study. According to Carnevale and Olsen (2003), this is a practice for many traditional students. Reasons could include avoiding early classes or simply taking the only available section of a course that is required.

The most widely used distributed learning modes used among the online survey respondents and the paper respondents were lecture (73.7% and 88.9% respectively), e-mail (66.9% and 55.4% respectively) and internet (59% and 63.9% respectively). When examining the overall satisfaction of respondents to these modes, 83% collectively were satisfied with their instruction.

The researcher found no difference in the two groups when asked if the course material was available when needed. Both groups agreed that material was readily available. There was also very little difference in the responses of both groups when queried whether it was difficult to complete assignments in timely manner. Again, both groups agreed that task completion was not difficult. There was a substantial difference in the responses of the two groups when questioned about their comfort level when asking questions and having public discussions. Only 43% of the online respondents agreed with that statement while 72.2% agreed that they felt comfortable asking questions and having public discussions.

When questioned about whether students participated in activities and discussions, and whether this participation was encouraged by the instructor, both groups of respondents agreed that this was the case in both instances, showing no differences in their responses.

When questioned, 73.7% of the online survey respondents agreed while 77.8% of the paper survey respondents agreed that the instructions were clear and to the point, exhibiting no significant difference in their responses.

There was very little difference in the responses when online survey respondents (66.5%) and paper survey respondents (75%) were asked whether they thought distributed learning was an appropriate instructional method for their particular subject

matter. There was a slight difference in the responses to the question on whether they would recommend distributed learning courses to others. Over two-thirds (67%) of the online survey respondents agreed while 80.6% of the paper survey respondents agreed.

Finally, the respondents were asked to rate their overall satisfaction with their distributed learning experience. Almost 70% of the online survey respondents and 80.6% of the paper survey respondents were very satisfied or satisfied with their experience.

Conclusions

Similarities found in the demographic information of the two surveyed groups cause the researcher to conclude that the findings are representative of the target population of graduate students at Marshall University.

Two-thirds of the respondents of both surveys were younger than 36 years of age. This leads the researcher to believe that this age group is more apt to respond to electronic surveys and utilize innovative modes of instruction. Employment status and student status did not appear to be factors in student satisfaction. This suggests that a variety of delivery modes will work satisfactorily. More single students, as well as female students participated in the survey, suggesting that gender and marital status could be contributing factors in distributed education participation.

Students still took advantage of traditional courses being taught on campus regardless of the distributed learning options available, suggesting that given options, students will most likely select the type of course best suited to their particular needs.

It appears that, based on findings in the study, as delivery mode utilization increases among students, levels of satisfaction also increases. As the comfort levels of students grow, they are able to articulate which delivery methods and curriculums work

better for them. Puntambekar (1999) states a great deal of the perceptions, positive or otherwise, students have concerning their distributed courses have been directly related to the types of interactions they experienced during their course. This is evidenced by comments from respondents of both the online and paper surveys when asked for ways to improve their distributed learning experience:

- *"Make it more personal. Make the student feel more like the info [sic] is for them. Like in a lecture setting."*
- *"More student interaction, less 'crunch time' deadlines, better use of classroom time."*
- *"Better communications with some instructors – sometimes hard to get in touch with them."*
- *"More interaction among students as if they were in the classroom may enhance the learning."*
- *"Nothing can take the place of face-to-face student/teacher interaction."*
- *"I believe there is better inaction between lecturer and student in a classroom setting than in a distance learning course."*
- *"Have available ways to communicate more immediately with fellow students."*

Given the responses from students in this study, it appears that the university should continue to expand its distributed education offerings. The findings lead the researcher to believe popularity of distributed learning will grow if student feedback is heeded and acted upon. Carnevale and Olsen (2003) discuss techniques other organizations have found helpful in their efforts to increase student enrollment:

- Bryan Polivka, chief learning officer, online higher-education division of Sylvan Learning Systems, Inc. says they use an "in-house index of 'student enthusiasm' to analyze data collected by Sylvan's online-learning system and help the company make better operational decisions."

- Tom Wilkinson, director of Virginia Tech's Institute for Distance and Distributed Learning says they "identify 35 barriers students have to enrolling in distance education so that officials can draw more students to the programs. The barriers include a need for universitywide online financial aid capabilities."
- Andrew S. Rosen, president of Kaplan, Inc. says they "use assessment technologies to tailor online-degree programs to students' individual needs."

The instructional needs and concerns of students remain strong motivators to organizations in their design and implementation of distributed learning curriculum. Providing learners with active roles in the evaluation of their learning strengthens the distributed learning program. This is evidenced in the Patterson (1999) study, which examines issues associated with learning from a distance and the impact these issues have on the administration.

Recommendations for Future Studies

Based on the data collected and analyzed for this study as well as the feedback received from the respondents of the study, the researcher recommends the following future research projects:

1. This study should be replicated on a global basis. For-profit and non-profit organizations as well as universities and colleges should be included for comparison purposes.
2. A study could be conducted to determine the degree to which the building of learning communities contributes to student success/satisfaction in distributed education.
3. A correlation study between adult learning theories and the success rates of selected distributed education programs should be conducted to determine if those programs grounded in adult learning theories produce greater results in terms of student success/satisfaction.
4. Research should be conducted to determine whether there is any correlation between student success and repeated enrollment in distributed learning courses.

5. Research concerning the effect of distributed learning in rural communities will become increasingly important as the cost of higher education rises.
6. Prospective researchers should recognize obstacles inherent in electronic data collection methodologies.
7. Barriers to utilizing distributed learning as instruction should be analyzed and possible solutions discussed.

REFERENCES

Aslanian, C. B. (2001). *Adult students today*. New York: The College Board.

Billings, D. (1993). Learning style preferences and distance education: A review of literature and implications for research. [ACSDE Research Monograph]. *Distance Education Symposium: Selected Papers Part 2*, 4, 1-11.

Bostock, S. J.(1998). *Constructivism in mass higher education: A case study*. Retrieved June 4, 2001 from http://www.keele.ac.uk/depts/cs/Staff/Homes/Stephen/docs/sin98pa6.htm.

Carnavale, D. and Olsen, F. (2003). *How to succeed in distance education*. The Chronicle of Higher Education, A31-A33.

Dede, C. (2000). Advanced technologies and distributed learning in higher education. In D. E. Hanna & Associates (Eds.), *Higher education in an era of digital competition: Choices and challenges*. (pp. 71-91), Madison, WI: Atwood Publishing.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York: Macmillan.

Dillman, D. A., Christenson, J. C., Salant, P., and Warner, P. D. (1995). *What the public wants from higher education: Workforce implications from a 1995 national survey*. Pullman, WA: Washington State University.

Dillman, D. A. (2000). *Mail and internet surveys:Tthe tailored design method* (2nd ed.). New York: John Wiley & Sons, Inc.

Fowler, F. J. (2002).*Survey research methods* (3rd ed.). Thousand Oaks: Sage Publications.

Gay, L. R. & Airasian, P. (2003). *Educational research: Competencies for analysis and applications* (7th ed.). New Jersey: Merrill Prentice Hall.

Haggis, T. (2002). Exploring the 'black box' of process: a comparison of theoretical notions of the 'adult learner' with accounts of postgraduate learning experience. *Studies in higher education*, volume 27, no. 2. UK: Carfax Publishing.

Hanna, D. E. (2000). Higher education in an era of digital competition: Global consequences. In D. E. Hanna & Associates (Eds.), *Higher education in an era of digital competition: choices and challenges*. (pp. 19-41), Madison, WI: Atwood Publishing.

Hensley, L. G., and Kinser, K. (2001). *Adult learner persistence: A study of tenacity*. (Paper presented at the annual meeting of the American educational research association).

Hsiao, J. *CSCL theories*. Retrieved July 12, 2002 from http://www.edb.utexas.edu/csclstudent/Dhsiao/theories.html.

Kidd, J. R. (1973). *How adults learn*. New York: Association Press.

Knowles, M. S. (1978). *The adult learner: A neglected species*. Houston: Gulf Publishing.

Knox, A. B. (1977). *Adult development and learning: A handbook on individual growth and competence in the adult years*. San Francisco: Jossey-Bass.

Lambert, L., Zimmerman, D. P., Lambert, M. D., Walker, D., Cooper, J. E., Gardner, M. E., et. al. (1995). *The constructivist leader*. New York: Teachers College Press, 17-18.

Merrian, S. B. and Simpson, E. L. (2000). *A guide to research for educators and trainers of adults*. (2nd ed.). Malabar, Florida: Krieger Publishing Company.

Patterson, N. J. H. (1999). *An evaluation of graduate class interaction in face-to-face and asynchronous computer groupware experiences: A collective case study.* (Paper presented at the Annual Meeting of the Association for the Study of Higher Education) (24th, San Antonio, TX, November 18-21, 1999)

Puntambekar, S. (1999), December). An integrated approach to individual and collaborative learning in a web-based learning environment. In C. Hoadley & J. Roschelle (Eds.), *Proceedings of the Computer Support for Collaborative Learning (CSCL) 1999 Conference*, Stanford University, Palo Alto, California. Mahwah, NJ: Lawrence Erlbaum Associates.

Quinnan, T. W. (1997). *Adult students "at risk": Culture bias in higher education.* Westport, CT: Bergin and Garvey.

Rovai, A. (2002). Building sense of community at a distance. In *International Review of Research in Open and Distance Learning*. Retrieved June 5, 2002 from http://www.irrodl.org/content/v3.1/rovai.hml.

Scardamelia, M. and Bereiter R. S., (in press). Schools as knowledge-building communities. In S. Strauss (Ed.), Human development: The Tel Aviv annual workshop: Vol 7. *Development and learning environments*. Norwood, NJ: Ablex.

Sikora, A. C. & Carroll, C. D. (2002). *A profile of participation in distance education* (NCES 2003-154). Washington, DC: U.S. Department of Education, national Center for Education Statistics.

Smith, R. M. (1990). *Learning to learn across the life span*. San Francisco: Jossey-Bass, Publishers.

Soloway, E., Jackson, S. L. Klein, J., Quintana, C., Reed, J., Spitulnik, J., et. al. *Learning theory in practice: Case studies of learner-centered design.* Retrieved June 10, 2002 from http://www.acm.org/sigchi/chi96/proceedings/papers/Soloway/es_txt.htm.

Thompson, M. M. (1998). Distance learners in higher education. In *Distance learners in higher education: Institutional responses for quality outcomes*. (pp. 9-24), Madison, WI: Atwood Publishing.

Vygotsky, L. (1962). *Thought and language*. Cambridge, MA: MIT Press.

Wegerif, R. (1998). *The social dimension of asynchronous learning networks*. JALN, 2(1), 34-49.

Winn, W. (1997). *Learning in hyperspace.* Retrieved June 24, 2002, from http://www.umuc.edu/ide/potentialweb97/winn.html.

Appendix A

Dear Marshall University Graduate Student:

I am requesting your assistance. I am currently conducting a study on student satisfaction in their distributed learning experiences as part of my graduate thesis in Adult & Technical Education.

Distributed learning is defined as instruction that is distributed throughout various media to students who may, or may not, be studying at a distance. Videotapes, compressed video, online courses, and computer-enhanced courses are examples of some of the distributed learning modes currently utilized at Marshall.

Below, you will find a link to a brief, anonymous survey. Please follow this link and take a few minutes to complete the survey. When you have completed it, press the submit button. Your answers will be confidential and the data will be collected in summary form.

Your participation in this study is greatly appreciated. If you have any questions or concerns, please feel free to email me at thill@marshall.edu.

Thank you,

Taella M. Hill

Survey - www.marshall.edu/see/survey/survey.html

Appendix B

Research Protocol Survey

Protocol Number _____
Principal Investigator _____

Survey:

Please circle your response.

1. Does your study use any of the 18 identifiers listed below?

   a. Yes b. No

2. Will you be enrolling or re-enrolling subjects for the above protocol on or after April 14, 2003?

   a. Yes b. No

3. Has the informed consent requirement for this protocol been waived by the IRB?

   a. Yes b. No

Thank you for your prompt response. Please contact Trula J. Stanley at (304) 696-7320 or email at Stanley@marshall.edu with any questions or concerns.

After completing this form return to Trula Stanley in the ORI office by _4/16/03_(date).

1. Names
2. Any geographical subdivisions smaller than a State, including street address, city, county, precinct, zip code, and their equivalent geocodes, except for the initial three digits of the zip code if according to the current publicly available data from the Bureau of the census: a) the geographic unit formed by combining all zip codes with the same three initial digits contains more than 20,000 people; and b) the initial three digits of a zip code for all such geographic units containing 20,000 or fewer people is changed to 000.
3. Any elements of dates (except year) for dates directly related to an individual, including birth date, admission date, discharge date, date of death; and all ages over 89 and all elements of dates (including year) indicative of such age, except that such ages and elements may be aggregated into a single category of age 90 or older.
4. Telephone numbers
5. Fax numbers
6. Electronic mail addresses
7. Social security numbers
8. Medical record numbers
9. Health plan beneficiary numbers
10. Account numbers
11. Certificate/license numbers
12. Vehicle identifiers and serial numbers, including license plate numbers
13. Device identifiers and serial numbers
14. Web Universal Resource Locators (URLs)
15. Internet Protocol (IP) address numbers
16. Biometric identifiers, including finer and voice prints
17. Full face photographic images and any comparable images
18. Any other unique identifying number, characteristic, or code

ResearchProtocolSurvey

Appendix C

Student Satisfaction Survey

This survey was not designed to evaluate the instruction you received. Rather, its intent is to simply survey the quality of your distributed learning experience from your point of view. Please take a few minutes to complete this survey. Answer the questions as accurately as possible based on your experience.

1. What is your gender? ❒ Male ❒ Female

2. What is your age group? ❒ Younger than 25 ❒ 26 – 35 ❒ 36 – 45 ❒ 46 – 55 ❒ 56 or Older

3. What is your marital status? ❒ Single ❒ Single with Children ❒ Married ❒ Married with Children

4. Are you employed? ❒ Full-time ❒ Part-time ❒ Not employed

5. What is your student status? ❒ Full-time ❒ Part-time

6. Do you take classes on campus? ❒ Yes ❒ No
   (If yes, please list them below):

7. Overall, which delivery method(s) do you currently use (or have you used in the past) in your coursework?

Check all that apply. How would you rate your overall satisfaction with the method(s)?

Delivery Method	**Currently Using**	**Used in the Past**	**Very Disappointed**		**Disappointed**		**Somewhat Satisfied**		**Satisfied**		**Very Satisfied**	
			USE NOW	USED IN PAST	USE NOW	USED IN PAST	USE NOW	USED IN PAST	USE NOW	USED IN PAST	USE NOW	USED IN PAST
Video												
Interactive TV												
Discussion Boards												
HEITV												
Video Conferencing												
Satellite												
Chat Rooms												
Lecture												
Bulletin Boards												
Electronic Mail												
Internet												
Other (Please Specify):												

8. Please rate the following statements.

Distributed Learning Process	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
The course materials (media, handouts, books, etc.) are available when needed.					
It is not difficult for me to complete my assignments in a timely manner.					
I feel comfortable asking questions and having public discussions.					
The students in my group participate in the activities and discussions.					
The instructor encourages participation from the students at regular intervals.					
The instructions are clear and to the point.					
I think that distributed learning is appropriate for this type of subject matter.					
I would recommend distributed learning courses to others.					

9. How would you rate your overall satisfaction with your distributed learning course(s)?

❒Very Satisfied
❒ Satisfied
❒ Somewhat Satisfied
❒ Disappointed
❒ Very Disappointed

10. What would you suggest be changed to make your distributed learning experience better?